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METHOD OF ROAD SURFACE MARKING

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This invention is generally concerned with the art of road and highway marking with strip materials, namely for providing a road or highway surface with centre-lines or with track-dividing lines or the like, prevailingly but not exclusively arranged lengthwise of the road.

More particularly, the present invention is concerned with the art of providing traffic signs of the above type, consisting of strip material in particular of the so-called elasto-plastic cold-plastic nature, i.e. of a plastic compound adapted to be laid on and adhesively connected to the road surface in strip form, in essentially cold state.

It is known to those skilled in the art to which this invention appertains that such marking materials possess several advantageous properties, such as permanent illumination and color contrast effect, also at the edges of the laid strip, durableness either to weathering and to most severe traffic wearing effect, and so on. On the other hand, some problems are involved in ensuring proper and full adhesion of such cold-plastic strip material, which unavoidably has a certain thickness, on very rough and irregular road surfaces. Such material cannot fully mate any minor irregularity of the road surface, or an unacceptable amount of binding agent would be required to form a layer filling any road surface irregularity and to support the strip material. In addition, it is further known that such strip materials would be preferably laid on a surface as flat and smooth as possible, in view of visibility and of resistance to wearing of. Any salient or protruding portion in the applied cold-plastic marking material will cause an irregular light reflection and shadowing effects and the wear of material will develop mostly at such salients and protruding locations.

It has been proposed to prepare a road surface for laying a strip marking material thereon, by covering the road surface portions, where the material is to be laid on, with a relatively thin layer of asphalt or like matter, capable of thoroughly filling any road surface porosity, holes and hollows, by sleeking said asphalt layer upper face, and then by applying the strip material on said upper face.

Such proposed mode of preparing a road surface to application of marking strip materials thereon, while being effective and advantageous in view of proper application and service of the strip material, is subject to the serious objection that the asphalt layer requires a very long time to cool and set on the road surface, prior than the strip of alasto-plastic cold marking material could be laid on and secured to the smooth upper face of said asphalt.

Such time interval will seriously disturb the roadableness of the highway, and the traffic must be kept far from the areas to be marked. If the strip material is laid on the asphalt when the latter material is still soft, the asphalt will darken and spoil the required high visibility of the strip. Such objection is more particularly severe when fast mechanical marking of road surfaces is desired, such as performed by making use of a fast travelling and operating road-marking apparatus of the type shown in my prior U.S. Patent No. 3,007,838, for example.

It is therefore an object of this invention to provide a new and advantageous method for marking a road surface, in particular an irregular or coarse road surface not properly adapted for direct laying on and connecting thereto a marking strip material of considered cold-plastic nature, the same method including the steps of defining on said road surface an area to be marked, of forming a layer of asphalt-like material on said area by spreading on said area said material in fluidified state, of sleeking said layer to form a smooth upper face thereof, of laying a thin protective film on said upper face prior to solidification of such material, and of laying on and connecting to said protective film the marking strip.

For proper protection of said marking strip from the underlaid asphalt layer, and for actuating a proper smooth surface for application of said strip, which has a given width, an asphalt layer having a width greater than the said given width is spread on the road surface, and a protective film having a width greater than the width of said asphalt layer is laid on said latter layer, so that the asphalt is fully covered by said film, and the said film upper face, above said layer, actuates a smooth and flat surface adapted for laying the said strip thereon.

A further object of this invention is to provide a new and advantageous apparatus for preparing an irregular road surfaue to be marked by making use of cold-plastic marking material in strip or tape form, upon the provision and the sleeking of an asphalt layer on said surface, along a predetermined marking area defined by a marking line.

These and other objects and advantages of the invention are in part obvious and in part will be made apparent as this description proceeds, and the features which are believed to be new and characteristic of the invention are in particular set forth in the appended claim. The invention itself, however, will be best understood from the following detailed description of a preferred form of embodiment thereof, when taken in conjunction with the accompanying drawings, forming an essential component of this disclosure, and wherein:

FIGURE 1 is a diagrammatical, perspective and fragmentary view of a road surface wherein a marking material of the considered type is laid on and applied according to the invention; and

FIGURE 2 is a somewhat simplified showing of the essential components of an apparatus adapted for preparing a road surface to application of said marking material, said components being shown partly in side elevation and partly in section.

Referring first to FIG. 1, there is shown a marking material in strip form S, which is laid on a perfectly smooth and flat surface embodied by the upper face of a laminated or film material **33**. Such film **33** is at its turn laid on the sleeked upper face of a layer **15** of asphalt or asphalt-like material or composition, or thermoplastic nature, spread over an irregular surface **11** of a road or highway. The said layer **15** is positively wider than the said marking strip S, so that a smooth flooring for said strip is formed, and the said firm **33** is at its turn wider than said layer **15**, so that the said strip is fully protected from the asphalt.

Such arrangement of parts, which is essential and critical of the invention, makes it possible to apply the said strip just after applying and sleeking of the asphalt layer, i.e. to perform the whole road marking process as an uninterrupted sequence of steps, including either the preparation of the irregular road surface and the effective